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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,874	04/06/2006	Ian David Kachne	300.001	5455

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EXAMINER	
BADR, HAMID R	
ART UNIT	PAPER NUMBER
1781	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,874	KAEHNE, IAN DAVID	
	Examiner	Art Unit	
	HAMID R. BADR	1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *36-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/22/2011 has been entered.

Claims 36-53 are being considered on the merits.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 36- 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 36 and 48 are indefinite for "enhancing the taste of a beer". The term "enhance" is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear over what standard this is to be "enhancing". Furthermore, since the flavor of beer is a complex sensation brought about by organic

and inorganic components of beer, it is not clear what is really 'enhanced' regarding a complex flavor.

3. Claims 36 and 48 are also indefinite for "mineral additive enhances taste of the finished beer compared to the taste provided by a finished base beer diluted solely with water". It is not clear whether the taste of undiluted beer is compared to the taste of diluted beer or the taste of a diluted beer containing the minerals is being compared to the taste of a diluted beer not containing the minerals. Therefore, one of ordinary skill in the art would not be reasonably apprised of the scope of the claims.

4. Claims 36 and 48-49 are indefinite for "finished base beer". It is not clear whether the finished base beer is the beer before diluting with water or after diluting with water. In other words it is not clear whether the minerals are added to the diluted beer or undiluted beer.

5. Claims 48-49 are indefinite for "before gassing with carbon dioxide" or "has been gassed with carbon dioxide". It is not clear whether the beer is carbonated or simply exposed to carbon dioxide. The phrase does not appear to be a common phrase in the art. If appropriate, it is suggested to use 'carbonation or carbonating or carbonated etc.'

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 36-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donhowe (US 2003/0157218; hereinafter R1) in view of Costa (WO 01/68534; hereinafter R2), Lindon et al. (US 5,786,006; hereinafter R3) and Alcazar et al. (2002, Multivariate characterization of beers according to their mineral content; hereinafter R4).

3. R1 discloses a process for the preparation of a sport beer or malt beverage that has enhanced nutrition in comparison to the existing beer or malt beverage. The beverage comprises a beer or malt beverage that contains supplements such as minerals, vitamins, anti-oxidants, proteins etc. (Abstract).

4. R1 discloses the process for the production of the sport beer as consisting of a brewing process wherein barley malt grain is milled, mixed with hot water, and carbohydrates are saccharified and fermented using yeast. After the fermentation by yeast, the yeast is separated and lagering or the maturation of the beer is carried out. The beer is transferred to a finishing tank where supplements such as calcium, zinc and/or iron are added. The supplements such as minerals or proteins or antioxidants are dissolved in water prior to the addition to the beer. [0017].

5. Given that a base beer is produced first, as disclosed by R1, it is clear that the minerals are added to the finished beer.

6. Given that the supplements are dissolved in water, it is clear that any dilution of the beer can be effectuated by those of skill in the art. The presently claimed dilution of 0.5% to 90% of the original strength of the beer is obvious. It is also clear that the higher the dilution rate, the lower the alcohol content of the diluted beer.

7. Additionally R1 claims a beverage having 0.45%-10% alcohol (R1 Claim 2). It is obvious that such a beer can represent the dilutions as presently claimed. It is therefore, clear that at higher alcohol content, e.g. the regular alcohol content of a specific beer type, minerals can be added to the beer without affecting the alcohol content.

8. Given that R1 discloses the process for making the original beer, it is obvious that any kind of beer such as stout beer, pilsner beer, light beer, extra light beer, medium strength beer etc. can be diluted and formulated with the minerals and other supplements.

9. The pH range of 3.5-5.0 is intrinsic to all beers. It is obvious that the pH of the diluted beer will be adjusted to preserving the taste of the beer and also for the preservation of the beer. The variability of pH in different beer types is also known to the people of skill in the art. The low pH of the product will also help the solubility of minerals in the diluted beer.

10. While R1 clearly is motivating for the supplementation of beer or malt beverages with minerals, it is silent regarding the groups of minerals as presently claimed.

11. R2 discloses additives for drinks and potable water. (Title and Abstract)

12. R2 discloses that the additive which could be solids, liquids etc. can be dissolved into drinks including beers and wines (page 2, Definition).

13. R2 discloses the mineral additives to include calcium 0-300 mg, Chlorine 0-60 mg, fluor 0-4 mg, chromium 0-50 microgram, iron 0-40 mg, phosphorus 0-300 mg, idodine0-300 microgram, magnesium 0-200 mg, manganese 0-5 mg, potassium 0-80 mg, selenium 0-50 microgram, sodium 0-150 mg, zinc 0-30 mg, copper 0-4 mg, gold 0-

20 microgram, silver 0-20 microgram, tin 0-20 microgram, molybdenum 0-50 microgram, nickel 0-10 microgram, silicium 0-20 microgram, vanadium 0-20 microgram. (pages 13-15). The amounts are based on the daily human consumption. Therefore, a serving size can be designed to supply for instance 150 mg of calcium for a daily consumption. Further, such minerals are added to the beverage so that they do not adversely affect the taste of the beverage.

14. It is also noted that heavy metals are also found in natural waters in part per billion (ppb) concentrations. The concentration of such elements in municipal and industrial waters can be found in water analysis reports. However, since the dilution of a beverage such as beer is usually done using highly purified water, the level of the heavy metals can be adjusted, in the purified water, by adding back low concentrations of heavy metals.

15. Given the spectrum of minerals, which can be added to beer, as disclosed by R2 and considering the fact that dilution of beer with water, to make low alcohol beer, will decrease the concentration of minerals in the diluted beer, and consequently the diluted beer will have a diluted taste, partly due to the lower mineral content of the diluted beer, the addition of mineral additives to a diluted beer would have been obvious to one of ordinary skill in the art. On the other hand, the determination of the concentration of minerals in an undiluted beer using conventional analytical techniques is routine in the art. Therefore, determining how much of each element is present in an undiluted beer would have been obvious as well. The problem to be solved is then adding the mineral type, relative to a specific type of beer, to the diluted beer to bring up the concentration

of that element to the undiluted level. This way the partial impact of minerals on the beer taste would be compensated for. The mineral profile of certain beer types are known in the art, therefore, adding the minerals whose concentrations are decreased, due to diluting the beer, is obvious.

16. Since the common forms of these minerals are the dry forms, it is obvious to use the dry form as presently claimed. It is also obvious that calcium and magnesium compounds should be brought into solution if compounds are not water soluble as presently claimed. It is obvious that carbonated beverages are produced using carbon dioxide as presently claimed. The form of mineral supplements which can be used in human nutrition are also known in the art, therefore, selection of a specific mineral to be added to beer would be obvious to an artisan.

17. The solubility of the minerals in water and in the presence of other chemicals necessitates the inclusion of acids and buffers as presently claimed. It would be obvious to those of skill in the art to include acids either organic or inorganic as well as buffers to sustain the solubility of the added minerals in the beer or beverage. It would also be obvious to use acids such as phosphoric acid both for dissolution of minerals and for the organoleptic properties of this acid. Use of phosphoric acid in regular carbonated beverages is known in the art. Further, inclusion of buffering salts such as potassium phosphate and potassium hydrogen phosphate in low alcohol beers is known in the art as recited in the instant specification. R1 and R2 are silent regarding the incorporation of lithium into the beverage.

18. R3 discloses incorporating lithium at 0.06-0.15 mg/L of mineral water (Abstract).

19. R1, R2, and R3 are silent regarding the mineral content and quality characteristics of beers regarding their mineral content.

20. R4 investigates the characterization of beer samples according to their mineral content. R4 discloses the determination of Zn, P, B, Mn, Fe, Mg, Al, Sr, Ca, Ba, Na and K in 32 beer samples. (Abstract)

21. R4 discloses that low alcohol beers are growing fast which is due to the attainment of better tasting products. Cereals, water, hops and yeast as well as industrial processing and containers may be the source of minerals present in beer. (page 45, Introduction)

22. R4 concludes that the chemometric approach in determining the mineral content provides a suitable method to differentiate beer samples. (page 52, conclusion) Given that mineral content of beers are different and even within a specific type of beer certain elements are more abundant than others, it is obvious that dilution of the beer will affect the normal levels of the mineral constituents and the taste effect of certain elements will be even affected more than others with special reference to elements of lower concentration. Therefore, adding minerals (depending on the type of beer) will change the taste, body and mouthfeel of the diluted beer.

23. In summary, R1 is clearly motivating for adding supplements including minerals to the beer with reduced alcohol (diluted beer). R2 and R3 also teach of fortifying drinks, including beer and wine, with minerals. R4 investigates the characterization of beer organoleptic attributes; based on mineral contents of various beers. Since diluting any beer (for the sake of lowering alcohol content) with water will cause a decrease in

the concentration of constituting minerals in a specific volume of the product, it would be obvious to those of skill in the art to add the minerals as taught by R1-R3 at least to a level which is ordinarily found in undiluted beers. One would expect to affect the organoleptic characteristics of the beer, as disclosed by R4, upon addition of minerals. Absent any evidence to contrary and based on the combined teachings of the cited references, there would be a reasonable expectation of success in creating a diluted beer containing minerals.

Response to Arguments

Applicants' arguments have been thoroughly reviewed. These arguments are not persuasive for the following reasons.

1. Applicants argue that the present invention does not add the mineral additive during the preparation process of the beer.

a. As clearly disclosed by R1, the minerals are added to the finished beer.

2. Applicants argue that the present invention adds a specific amount of a unique composition, which is constant for a specific type of beer, on top of the minerals already present in the finished base beer.

a. No unique composition is claimed. Furthermore, most of the ranges of minerals claimed overlap the ranges disclosed by the cited references. On the other hand, as addressed in the previous interview with applicants' representative, there are ranges showing a lower limit of zero. Therefore, as implied by this lower limit, that specific mineral does not have any impact on the flavor of the beer.

b. Further, applicants have not shown any unexpected results upon adding certain minerals to the base beer.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,788,066 discloses the addition of potassium phosphate and potassium hydrogen phosphate to low alcohol beer to enhance flavor. Matsushige, I; de Oliveira, E. 1993. Food Chem. 47:205. This reference reports on the levels of Co, Cr, Cu, Fe, Pb, and Zn in canned and bottled beers. The results showed the good quality of the beers with respect to their metal content.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
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HAMID R BADR
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